CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2000
DateRun:	08/29/2000
Experimenters:	Jason Marshall
ClientType:	General
ProjectNumber:	Project #1
Substrates:	Plastic
PartType:	Part
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Dirt, Oil
Cleaning Methods:	
Analytical Methods:	Gravimetric
Purpose:	To re-conduct a comparative test based on client input for gravimetric analysis to determine weight of contaminant on supplied parts.
Experimental Procedure:	All of the parts received from the client were dried in an oven for 24 hours at 150oC. Parts were cooled to room temperature and divided into two groups, clean and dirty. The thirty samples that were cleaned in isopropanol (from previous trial) were weighed on a Denver Instrument Co, model A-250 Analytical Balance to establish a baseline level of cleanliness. The average weight of the “clean” parts was calculated and recorded. Following the weighing of the baseline parts, the uncleaned parts were then weighed (27) and the average value was recorded as well. The two average weights were then compared to each other to determine any correlation between the two weights. SUBSTRATE MATERIAL: Polyimide (plastic) CONTAMINANTS: oil, dirt CONTAMINATING PROCESS USED: Parts received contaminated
Results:	The thirty clean dry samples had an average weight of 1.9667 grams and the dirty samples were slightly heavier with an average of 1.9685 grams. The weight difference, although small, corresponds closely with the amount of contaminant removed (0.000767 g) during the first phase of testing (SCL#: 00-8141-01-5). The clean and dirty dry weights were both less than the previous weights. Table 1 lists the individual dry weights and the average values for the dry and wet weights.

Table 1. Sample Weights

Clean Dry Weight			Dirty Dry Weight		
1.9827	1.9738	1.9698	1.9543	1.9613	1.9878
1.9531	1.9622	1.9666	1.989	1.9913	1.9452
1.9764	2.0022	1.9622	1.9521	1.9532	1.9613
1.9919	2.0040	1.9559	1.9957	1.9412	1.9447
1.9436	1.9949	1.9950	1.9958	1.9955	1.9946
1.9479	1.9646	1.9981	1.9770	1.9570	1.9932
1.9401	1.9453	1.9678	1.9527	1.9613	
1.9419	1.9663	1.9587	1.9370	1.9409	
1.9491	1.9398	1.9420	1.9691	1.9685	
1.9471	1.9689	1.9899	1.9743	1.9867	
Average	1.9667		Average	1.9685	
Previous	1.9956		Previous	1.9910	

Summary:	
Conclusion:	Upon further review of the gravimetric analysis, drying the parts for 24 hours yielded results which correspond with what was determined during the first phase of testing using the filtration methodology. This method however, would be very difficult to implement due to the relatively small amounts of contaminants found on the dirty parts.